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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,701	02/10/2004	Byung Chul Ahn	049128-5144	8591

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,701

Applicant(s)

AHN ET AL.

Examiner

Anita K. Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on election 5/15/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-87 is/are pending in the application.
- 4a) Of the above claim(s) 1-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49-54, 58-83 and 87 is/are rejected.
- 7) ☒ Claim(s) 55-57, 84-86 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/15/05 6/3/05 2/27/06</u> | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Applicant's election with traverse of Group II in the reply filed on December 23, 2005 is acknowledged. The traversal is on the ground(s) that there is no undue burden. This is not found persuasive because the groups have different searches and classification, which poses undue burden.

The requirement is still deemed proper and is therefore made FINAL.

Applicant's election with traverse of Group II in the reply filed on May 15, 2006 is acknowledged. The traversal is on the ground(s) that it has not been established that the inventions are unrelated and that it does not address the traverse of December 23, 2005. This is not found persuasive because the different effects, different design and different modes of operation are that Group I has etching according to a crystallization rate, for use in any device, whereas Group II has no crystallization and is directed to a display device. The traverse of December 23, 2005 has now been addressed above.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The disclosure is objected to because of the following informalities: in paragraph [0013] the same reference numeral "22" is used for two different parts, and in paragraph [0019] it appears that active layer "13" should have reference numeral - - 14 - - in order to be consistent with Fig.3B.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 54, 58 and 87 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 54, line 3, the term “the transparent conductive film” lacks proper antecedent basis. In claims 58 and 87, the term “Tn” is unclear.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 49-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaneko et al (US 6,433,842 B1).

Kaneko discloses a method for fabricating a thin film transistor substrate for a display device, comprising:

forming a gate line 2,3 (col.7, line 47);

forming a gate insulating film 4 covering the gate line (col.7, line 48); forming a semiconductor layer 5, 6 at a desired area on the gate insulating film (col.7, lines 48-52);

forming a data line 7,8,9 crossing the gate line, a source electrode and a drain electrode (col.7, lines 52-60);

forming a protective film 10 in such a manner to cover the gate line, the data line, the source electrode and the drain electrode (col.8, lines 34-35); and

forming a pixel electrode 11 making an interface with the protective film at the remaining area excluding an area where the protective film is formed and connected to the drain electrode (col.9, lines 22-32).

Claims 49-53, 59-73 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kim et al (US 6,407,782).

Kim discloses a method of fabricating a thin film transistor substrate for a display device comprising forming the gate line, gate insulating film, semiconductor film, data line, source and drain electrodes, protective film and etching to form a pixel electrode (col.6, lines 41-65; col.4, lines 63-67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 54, 74-83 rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko or Kim as applied above, further in view of JP 2001-0066262.

Kaneko or Kim fail to teach using a photoresist to pattern the transparent conductive film. JP 2001-0066262 teaches that a useful technique for patterning transparent conductive films for use as pixel electrodes is to coat the transparent conductive film, to deposit a photoresist, to crystallize the transparent electrode where the photoresist is present, and to selectively etch to thereby leave on the crystalline transparent conductive film (see abstract). It would have been obvious to one with ordinary skill in the art to form the patterned pixel electrode as taught by JP 2001-0066262 in the method of Kim or Kaneko because JP 2001-0066262 teaches that it is a useful, simpler technique for patterning transparent metal layers.

Allowable Subject Matter

Claims 55-58 and 84-87 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims, and if rewritten to overcome the 35 USC 112, 2nd paragraph rejection.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest a method of fabricating a thin film transistor substrate for a display device comprising forming the gate line, gate insulating film, semiconductor film, data line, source and drain electrodes, protective film and a pixel electrode, and forming a crystallization catalyst layer at the remaining area excluding an area where the protective film is formed between the fifth and said sixth step, as in the context of claim 55.

The closest prior art, Kim or Kaneko, etch amorphous transparent electrode layers using a mask. There is no motivation to add the extra step of forming a crystallization layer and then to use the crystallization layer to enable selective removal of the amorphous, yet leaving the crystalline pixel electrode layer, as in the context of claim 55.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art shows methods of making liquid crystal displays.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

Art Unit: 1765

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765